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08/139,904 10/22/93 OTA

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EXAMINER

E6M1/1113

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ART UNIT - C PAPER NUMBER

2609

14

DATE MAILED: 11/13/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 08/15/96 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 (THREE) month(s), XXX days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-5 and 7-34 are pending in the application.

Of the above, claims 17-34 are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-5 and 7-16 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☒ The proposed drawing correction, filed 08/15/96, has been ☒ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

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Part III DETAILED ACTION

Election/Restriction

1. This application contains claims 17-34 drawn to an invention non-elected with traverse in Paper No. 10. A complete response to the final rejection must include cancellation of non-elected claims or other appropriate action (37 C.F.R. § 1.144) M.P.E.P. § 821.01.

Specification

2. A substitute specification is required because it is difficult to enter a long amendments in the specification (preliminary amendment filed on August 18, 1994) and the substituted specification can reduce the number of printing errors. Applicant should not provide the claims and the Abstract of Disclosure since the claims and the Abstract of the Disclosure have been entered. The specification filed must be accompanied with a statement the it contains no new matter and a marked-up copy of the original specification showing additions and deletions.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

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A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

4. Claims 1-5 and 7-16 are rejected under 35 U.S.C. § 103 as being unpatentable over Takeda et al (U.S Patent No.5,151,805; hereinafter simply referred to as Takeda).

As to claim 1, Takeda (figures 1 and 5) discloses a matrix panel display apparatus including a plural signal lines (16a-16z) and plural scanning lines (15a-15z). Takeda teaches a picture element (7) disposed near intersection point of signal line and scanning line including picture electrode and counter electrode (two electrodes disposed between liquid crystal material). Takeda teaches a transistor (3) for applying image signals from the signal line (element 16 of figure 5 or element 2 of figure 1) and transistor (3) being controlled in response to scanning signals received on a scanning line (element 15 of figure 5 or element 1 of figure 1).

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Takeda teaches means for generating auxiliary signals (modulation signal V_e) for increasing the effective voltages of the image signals and for applying the auxiliary signals (modulation signal V_e) to the picture elements (7) during a predetermined period which the transistor (3) is in non-conductive state (off state); see column 7, lines 47-50 and line 63 through column 8, line 11 and column 10, lines 65-67. While Takeda only demonstrates one picture element (7), one transistor (3) as well as the auxiliary signals applied to the picture elements in odd field and even field, but obviously, the auxiliary signal (V_e) of Takeda is applied to all picture elements of the display so that the brightness and the display picture quality of the whole display screen can be improved. It would have been obvious to one of ordinary skill in the art that the picture element (7) of Takeda is not selected when the transistor (3) is non-conductive state since the picture element is on or off determined by the signal applied to the transistor via data signal and scanning signal. Thus, when the transistor of Takeda is off, there are no voltage signal applied to the scanning wire and signal wire. This implies that the pixel elements is not selected.

As to claim 2, this claim differs from claim 1 only in that the limitation "applying the auxiliary signals to the picture element electrodes" is recited. This limitations reads on the

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modulation signal (Ve) connected to point A of the pixel element 7 as shown in figure 1 of Takeda.

As to claim 3, this claim differs from claim 1 in that the limitation "applying the auxiliary signals to the counter electrodes" is recited. This limitation reads on the modulation circuit (26) of Takeda connected to opposite electrode or counter electrode as shown in figure 11.

As to claims 15 and 16, these claims differs from claim 1 in that claims 15-16 are method wherein claim 1 is apparatus. Thus, the method claims 15-16 are analyzed as previously discussed with respect to the apparatus claim 1.

As to claims 4-5, Takeda clearly teaches the auxiliary signal operating in response to the image signal and provided in a scanning circuit.

As to claim 7, Takeda clearly shows variable amplitude auxiliary signal (positive Ve and negative Ve).

As to claim 8, Takeda teaches auxiliary signals being independent of the image signals (modulation circuit of Takeda does not connect to image signal driving circuit).

As to claim 9, liquid crystal is clearly taught by Takeda.

As to claim 10, the claimed "the time average of the auxiliary signal nearly equals to zero" reads on the time period between positive modulation signal Ve and negative modulation signal Ve of Takeda.

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As to claims 12-13, auxiliary signal generating circuit and auxiliary signals information generation means reads on the modulation circuits (13) and (14) of Takeda; see figure 5.

As to claim 14, Takeda clearly teaches TFT (3).

Response to Arguments

5. Applicant's arguments filed August 15, 1996 have been fully considered but they are not deemed to be persuasive.

On page 15, lines 1-3, Applicant states that the substitute specification is being prepared and will be submitted later date. However, the objection of substitute specification is maintained in this Office Action since the substitute specification has not been received yet.

On page 15, line 10 through page 16, line 2, Applicant argues that Takeda does not disclose the features of claim 6. That is the auxiliary signals are applied during a predetermined period while all of the picture elements are in a non-selected state. Examiner disagrees with Applicant that Takeda does not teach the feature of claim 6 as mentioned above. First of all, Applicant agrees that Takeda teaches the all the limitations recited in the original claim 1 which includes the claimed "applying the auxiliary signals the picture elements while each of the transistors is in a non-conducting state and each of the picture elements is not selected". Thus, once the auxiliary

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signal (Ve) is applied to the period of non-selection state of the picture element, the auxiliary signal (Ve) also performs the same function to other picture elements in the matrix display. For example, figure 16a-16b of Takeda shows the auxiliary signals (Ve) are applied to at least four picture elements via scanning signals (ch(N) and ch(N+1) during non-selection state. Thus, in order to improve the whole display screen, obviously, the auxiliary signals (Ve) are applied to all of the picture elements displayed on the screen during non-selection state. Secondly, it does not make any sense that the auxiliary signal (Ve) of Takeda is applied only one or two picture elements of the display.

On an entire page 16, Applicant simply repeats the limitations "all of the picture elements" and "all of the transistor are in non-conducting state" as well as "none of the picture elements is selected" are now recited on the independent claims 1, 2, 15 and 16. However, this limitation is met by Takeda as previously discussed in the rejection and the arguments above.

As to dependent claims 4-5 and 7-14, Applicant has not challenged with any reasonable degree of specificity the rejection of dependent claims 4-5 and 7-14. These claims fall with independent claims.

Conclusion

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6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

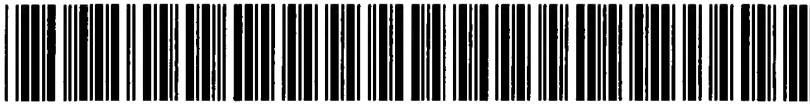
A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (703) 308-6603.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-3880.

CN
C. Nguyen
November 7, 1996


CHANH NGUYEN
PATENT EXAMINER
ART UNIT 2609



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